

IN THE CLAIMS:

Please amend claims

Claim 1. (Currently amended) ~~Apparatus for use in cutting a plug from hard material of the earths surface including rock and like to make a post hole in said material, said apparatus~~

A rock auger comprising:

a drive shaft having a longitudinal axis, means at one end of said drive shaft for connecting ~~the same~~ a first end of said drive shaft to a power driven unit and a cutting head mounted on and projecting from ~~an~~ a second end of ~~said drive~~ shaft ~~opposite said one end~~, said cutting head including a side wall connecting a top edge and a bottom edge defining a tubular body disposed coaxial with said drive shaft and terminating in a free outer end spaced a selected distance from the second end of said drive shaft ~~opposite said one end~~, a plurality of conical teeth mounted on said bottom edge of said side wall and extending from the free end thereof in an array about the periphery of an opening of selected diameter into a cavity defined by said side wall, said cavity being of selected depth for receiving therein a plug cut from said material by said teeth as said tubular body is rotated about said axis, said side wall having at least one opening extending from said top edge of said tubular body a selected distance there through forming a cutaway portion extending downwardly from said top edge. ~~that includes an edge, said edge having length in a direction parallel to said axis for scraping debris from the wall of the post hole during rotation of the cutting head about said axis.~~

Claim 2. (Currently amended) ~~An auger apparatus for use in cutting a plug from hard material of the earths surface including rock and like to make a post hole in said material, said apparatus~~ A rock auger comprising:

a cutting head including a side wall defining a tubular body and end plate including a solid central portion;

means at one end of said cutting head for connecting said end plate to a power driven unit;
a plurality of conical teeth mounted on said side wall extending from the free end thereof in

an array about the periphery of an opening of selected diameter into a cavity defined by said side wall, said cavity being of selected depth for receiving therein a plug cut from said material by said teeth as said tubular body is rotated about an axis, said side wall including an opening defining a cutaway portion including lateral edges.

Claim 3. (Original) The auger apparatus of claim 2, further including a drive shaft mounted in cooperative engagement with said means for connecting to a power driven unit and projecting from an end of said cutting head opposite said teeth.

Claim 4. (Currently amended) The auger apparatus of claim 3, wherein said drive shaft having a longitudinal axis includes means at one end of said drive shaft for connecting the ~~same drive shaft~~ to a power driven unit disposed co-axially with said cutting head and terminating in a free outer end ~~spaced a selected distance from the end of said shaft opposite said one end.~~

Claim 5. (Original) The auger apparatus of claim 2, wherein said means for connecting includes an end plate connecting to at least a portion of said side wall forming said tubular body of said cutting head opposite said teeth, joining at least two points of said side wall.

Claim 6. (Original) The auger apparatus of claim 2, wherein said body includes a cutaway portion extending around the periphery thereof a selected length forming an edge extending along a portion of said side wall generally parallel to said axis.

Claim 7. (Currently amended) An auger apparatus comprising:
a cutting head including a side wall defining a tubular body and end plate;
means at one end of said cutting head for connecting said end plate to a power driven unit;
a plurality of teeth mounted on said side wall extending from the free end thereof in an array about the periphery of an opening of selected diameter into a cavity defined by said side wall, said cavity being of selected depth for receiving therein a plug cut from said material by said teeth as said tubular body is rotated about an axis, said side wall including an opening defining a cutaway portion

including lateral edges;

~~The auger apparatus of claim 2, wherein said body includes a cutaway portion extending around the periphery thereof a selected length forming an edge extending along a portion of said side wall generally parallel and vertical to said axis.~~

Claim 8. (Currently amended) An auger apparatus comprising:
a cutting head including a side wall defining a tubular body and end plate;
means at one end of said cutting head for connecting said end plate to a power driven unit;
a plurality of teeth mounted on said side wall extending from the free end thereof in an array about the periphery of an opening of selected diameter into a cavity defined by said side wall, said cavity being of selected depth for receiving therein a plug cut from said material by said teeth as said tubular body is rotated about an axis, said side wall including an opening defining a cutaway portion including lateral edges;

~~The auger apparatus of claim 2, wherein said body includes a cutaway portion extending around the periphery thereof a selected length forming an edge extending along a portion of said side wall generally disposed at an angle and generally parallel to said axis.~~

Claim 9. (Original) The auger apparatus of claim 5, further comprising a pilot drill extending from an end plate, said pilot drill disposed within said tubular body and extending in axial alignment therewith.

Claim 10. (Original) The auger apparatus of claim 9, wherein said pilot drill extending pass said teeth extending from said lower peripheral edge of said cutting head.

Claim 11. (Original) The auger apparatus of claim 9, wherein said pilot drill includes a removable tip;.

Claim 12. (Currently amended) An auger apparatus comprising:
a cutting head including a side wall defining a tubular body and end plate;
means at one end of said cutting head for connecting said end plate to a power driven unit;
a plurality of teeth mounted on said side wall extending from the free end thereof in an array
about the periphery of an opening of selected diameter into a cavity defined by said side wall, said
cavity being of selected depth for receiving therein a plug cut from said material by said teeth as said
tubular body is rotated about an axis, said side wall including an opening defining a cutaway portion
including lateral edges;

said means for connecting includes an end plate connecting to at least a portion of said side
wall forming said tubular body of said cutting head opposite said teeth, joining at least two points
of said side wall;

a pilot drill extending from an end plate, said pilot drill disposed within said tubular body and
extending in axial alignment therewith; and

~~The auger apparatus of claim 9, including~~ means for reinforcing and bracing said pilot drill
shaft mounting to said bottom surface of said end plate.

Claim 13. (Original) The auger apparatus of Claim 12, wherein said means for reinforcing
and bracing said pilot drill shaft comprises at least one reinforcing member extending from said
bottom surface of said mounting end plate and attaching to at least one selected point of said pilot
drill shaft.

Claim 14. (Original) The auger apparatus of Claim 12, wherein said means for reinforcing
and bracing said pilot drill shaft comprises a plurality of tapered support plates having a broad base
extending from said bottom surface of said mounting end plate and a tapered end attaching to said
selected point of said pilot drill shaft.-

Claim 15. (Original) The auger apparatus of Claim 14, wherein said tapered support plates
are welded all along the edge to said pilot drill shaft extending to a point near said drill tip.

Claim 16. (Original) The auger apparatus of Claim 9, wherein said distal end of said pilot drill shaft ends in a short cylindrical collar including means for removably attaching said drill tip.

Claim 17 (Currently amended) An auger apparatus comprising:
a cutting head including a side wall defining a tubular body and end plate;
means at one end of said cutting head for connecting said end plate to a power driven unit;
a plurality of teeth mounted on said side wall extending from the free end thereof in an array
about the periphery of an opening of selected diameter into a cavity defined by said side wall, said
cavity being of selected depth for receiving therein a plug cut from said material by said teeth as said
tubular body is rotated about an axis, said side wall including an opening defining a cutaway portion
including lateral edges;

~~The auger apparatus of Claim 2,~~ said tubular body further comprising a double side wall having an overlapping lateral cutaway portion staggered forming a double edge.

Claim 18. (Original) The auger apparatus of Claim 2, said means for connecting to a power unit including a quick disconnect assembly.

Claim 19. (Currently amended) An auger apparatus comprising:
a cutting head including a side wall defining a tubular body and end plate;
means at one end of said cutting head for connecting said end plate to a power driven unit;
a plurality of teeth mounted on said side wall extending from the free end thereof in an array
about the periphery of an opening of selected diameter into a cavity defined by said side wall, said
cavity being of selected depth for receiving therein a plug cut from said material by said teeth as said
tubular body is rotated about an axis, said side wall including an opening defining a cutaway portion
including lateral edges;

~~The auger apparatus of Claim 2, wherein~~ said cutaway portion of said tubular body extends around the periphery thereof a selected length extending from a lower peripheral cutting edge toward said end plate, said cutaway portion forming at least one lateral cutting edge.

Claim 20. (Original) The auger apparatus of claim 9, wherein means for cooperatively engaging a drive shaft extends from a top surface of said end plate and comprises a socket shaped for cooperatively engaging a drive shaft having a diameter less than said cutting head, said drive shaft including a proximal end cooperatively engaging said socket of said end plate and having an opposing distal drive end extending therefrom.

Claim 21. (Currently amended) An auger apparatus comprising:

a cylindrical hollow cutting head comprising a hollow cylindrical body defining a side wall connecting to an end plate, said hollow cylindrical body defining an upper peripheral edge and a lower open end defining a lower peripheral cutting edge including a plurality of conical teeth extending from said lower peripheral edge;

said end plate of said hollow cylindrical body extending across joining said side wall;

a drive shaft having a diameter less than said cutting head, said shaft including a proximal end connecting to said end plate prohibiting material flow there through and having an opposing distal drive end extending therefrom;

means for connecting said distal end of said drive shaft to a power unit; and

a cutaway portion of the body extending around the periphery thereof a selected length forming a side wall edge extending along said cutaway portion.

Claim 22. (Currently amended) An auger apparatus, comprising:

a cylindrical hollow cutting head comprising a hollow cylindrical body defining a tubular side wall connecting to an end plate extending across an upper peripheral edge of said hollow cylindrical body and a lower open end defining a lower peripheral cutting edge including a plurality of conical teeth extending from said lower peripheral edge;

a drive shaft having a diameter less than said cutting head, said drive shaft including a proximal end connecting to said end plate prohibiting material flow there through and having an opposing distal drive end extending therefrom; and

a pilot drill extending from an end plate, said pilot drill disposed within said cylindrical hollow cutting head and extending in axial alignment with said drive shaft;

said pilot drill extending pass said teeth extending from said lower peripheral edge of said cutting head; and

a cutaway portion of the body extending around the periphery thereof a selected length forming an opening and defining a side wall edge extending along a portion of said side wall from along a portion of the bottom above said teeth toward said end plate.

Claim 23. (Currently amended) An auger apparatus, comprising:

a cylindrical hollow cutting head comprising a hollow cylindrical body defining side wall connecting to an end plate extending across an upper peripheral edge of said hollow cylindrical body and a lower open end defining a lower peripheral cutting edge including a plurality of teeth extending from said lower peripheral edge;

said end plate extending across said side wall and including at least one opening there through;

a drive shaft having a diameter less than said cutting head, said drive shaft including a proximal end connecting to a top surface of said end plate prohibiting material flow there through and having an opposing distal drive end extending therefrom; and

a cutaway portion of the body extending around the periphery thereof a selected length forming an opening extending along a portion of said side walls extending from said lower peripheral cutting edge to a selected point of said end plate, said cutaway portion forming a lateral side wall edge.

Claim 24. (Currently amended) An auger apparatus, comprising:

a cylindrical hollow cutting head comprising a hollow cylindrical body defining side wall connecting to an end plate extending across said side wall enclosing at least a portion of said hollow cylindrical body, and a lower open end defining a lower peripheral cutting edge including a plurality of conical teeth extending from said lower peripheral edge;

a drive shaft having a diameter less than said cutting head, said drive shaft including a proximal end connecting to a top surface of said end plate prohibiting material flow there through and said drive shaft having an opposing distal drive end extending therefrom; and

at least one cutaway portion of the body extending around the periphery thereof a selected length forming an opening extending along a portion of said side walls extending from said lower peripheral cutting edge to a selected point of said end plate, said cutaway portion forming a lateral side wall edge.

Claim 25. (Original) An auger apparatus, comprising:

a cylindrical hollow cutting head comprising a hollow cylindrical body defining side wall connecting to an end plate extending between said side wall enclosing at least a portion of a top end of said hollow cylindrical body, and a lower open end defining a lower peripheral cutting edge including a plurality of teeth extending from said lower peripheral edge;

said side wall of said hollow cylindrical body including at least one opening therein;

a drive shaft having a diameter less than said cutting head, said drive shaft including a proximal end connecting to a top surface of said end plate and having an opposing distal drive end extending therefrom; and

a pilot drill extending from a bottom surface of said end plate, said pilot drill disposed within said cylindrical hollow cutting head and extending in axial alignment with said drive shaft;

said pilot drill having a removable tip;

said pilot drill extending pass said teeth extending from said lower peripheral edge of said cutting head; and

a cutaway portion of the body extending around the periphery thereof a selected length forming an opening extending along a portion of said side walls extending from said lower peripheral cutting edge to a selected point of said end plate, said cutaway portion forming an angled lateral side wall edge.

Claim 26. (Currently amended) An auger apparatus, comprising:

a cylindrical hollow cutting head comprising a hollow cylindrical body defining side wall connecting to an end plate extending across side wall enclosing at least a central portion of a top end of said hollow cylindrical body and prohibiting flow of material there through, and a lower open end defining a lower peripheral cutting edge including a plurality of conical teeth extending from said

lower peripheral edge;

a drive shaft having a diameter less than said cutting head, said drive shaft including a proximal end connecting to a top surface of said end plate and having an opposing distal drive end extending therefrom; and

a cutaway portion of the body extending around the periphery thereof a selected length forming an opening extending along a portion of said side walls extending from said lower peripheral cutting edge to a selected point of said end plate, said cutaway portion forming a lateral vertical side wall edge.

Claim 27. (Currently amended) An auger apparatus, comprising:

a cylindrical hollow cutting head comprising a hollow cylindrical body defining side wall connecting to an end plate extending across side wall enclosing at least a central portion of a top end of said hollow cylindrical body prohibiting flow of material there through, and a lower open end defining a lower peripheral cutting edge including a plurality of teeth extending from said lower peripheral edge;

means for cooperatively engaging a drive shaft extending from a top surface of said end plate;

a cutaway portion of the body extending around the periphery thereof a selected length forming an opening extending along a portion of said side walls extending from said lower peripheral cutting edge to said end plate, said cutaway portion forming a lateral side wall edge.

Claim 28. (Currently amended) An auger apparatus, comprising:

a cylindrical hollow cutting head comprising a hollow cylindrical body defining side wall connecting to an end plate extending across and joining said side wall enclosing at least a portion of said hollow cylindrical body, said cylindrical hollow cutting head having a lower open end defining a lower peripheral cutting edge including a plurality of conical teeth projecting from said lower peripheral cutting edge;

means for cooperatively engaging a drive shaft extending from a top central surface of said end plate prohibiting flow of material there through;

a cutaway portion of the body extending around the periphery thereof a selected length

forming an opening extending along a portion of said side walls extending from said lower peripheral cutting edge to said end plate, said cutaway portion forming a lateral side wall edge.

Claim 29. (Original) The auger apparatus of Claim 28, including means for reinforcing and bracing said pilot drill shaft mounting to said bottom surface of said end plate.

Claim 30 (Currently amended) An auger apparatus, comprising:
a cylindrical hollow cutting head comprising a hollow cylindrical body defining side wall
connecting to an end plate extending across and joining said side wall enclosing at least a portion
of said hollow cylindrical body, said cylindrical hollow cutting head having a lower open end
defining a lower peripheral cutting edge including a plurality of teeth projecting from said lower
peripheral cutting edge;

means for cooperatively engaging a drive shaft extending from a top surface of said end plate;
a cutaway portion of the body extending around the periphery thereof a selected length
forming an opening extending along a portion of said side walls extending from said lower
peripheral cutting edge to said end plate, said cutaway portion forming a lateral side wall edge.

~~The auger apparatus of Claim 28,~~ said hollow cylindrical body further comprising a double side wall having an overlapping lateral cutaway portion staggered forming a double side wall edge.

Claim 31. (Original) The auger apparatus of Claim 28, said means for cooperatively engaging a drive shaft including a quick disconnect assembly.

Claim 32. (Currently amended) An auger apparatus comprising:
a cylindrical hollow cutting head for removing plugs of hard material from post holes comprising a hollow cylindrical body defining side wall connecting to an end plate, said hollow cylindrical body defining an upper peripheral edge and a lower open end defining a lower peripheral cutting edge including a plurality of removable conical teeth extending from said lower peripheral edge;

said end plate extending across a central portion of said hollow cylindrical body joining said side wall and covering at least a central portion thereof;

a drive shaft having a diameter less than said cutting head, said drive shaft including a proximal end connecting to a top surface of said end plate and having an opposing distal drive end extending therefrom;

means for connecting said distal drive end of said shaft to a drive shaft of a power unit; and

at least one cutaway portion of the body extending around the periphery thereof a selected length forming an opening extending along a portion of said side walls extending from said lower peripheral cutting edge to said end plate, said cutaway portion forming at least one lateral side wall edge.

Claim 33. (Original) The auger apparatus of claim 28, further comprising a pilot drill bit including a pilot drill bit shaft and tip disposed within said cylindrical hollow cutting head, said pilot drill bit shaft mounting to a bottom surface of said mounting end plate.